Oroville Facilities P-2100 Relicensing
Environmental Work Group
Programmatic Resource Action Groupings

Name of Resource Action (Program)	EWG_ID#	Location of Resource Action	Comments
Large Woody Debris Program			
a. Develop a LWD Enhancement Program for the Lower FR	13A	Lower Feather River	EWG-13B and EWG-20 are tools/opportunities to implement LWD program - Source McCabe Crk./Orchards
Fish Passage Program			
a. Modify Passage Barriers in the Lower FR for Improved Sturgeon/Shad Habitat	5		Possibly separable, candidate species
b. Trap and Haul Anadromous Fish (Above Barriers)	97A	Includes passage past U.S. dams	Chinook salmon, steelhead, and lamprey
c. Trap and Haul Anadromous Fish with Adaptive Management	97B	Optimal Areas	May be similar to EWG-97A
Low Flow Channel Fish Barrier Weir Program			
a. Install a Weir Downstream of FBD in LFCFR and Conduct Trial Program	2A 101	Low flow channel downstream of Fish Barrier Dam	See structure description in narrative
Oroville Wildlife Area Management Program		Cross resource with Rec. Group (e.g. funding/stocking options)	
a. Develop Aquatic Weed Control Measures in TAF ponds	29	Thermalito Afterbay	Chemical or mechanical; restore natives
b. Install Wood Duck Boxes	58	OWA	
c. Develop Hydrologic Flow Regime Management Protocols	61 & 66	OWA and HFC	For Riparian Enhancement - could be expanded to river channel
d. Develop Maintenance and Rec. Protocols for Protection of Special Status Species (TES)	78A/B & 80	OWA, Thermalito Complex, Feather River	
e. Enhance Riparian Habitat for Terrestrial Species	79	OWA	Gail K. would have additional details
g. Develop Non-Native Plant Control Measures	74A	OWA	
h. Create trout stocking program in suitable OWA ponds	47	OWA	Ponds would need suitable cold water; require CA F&G input
i. Stocking program of warmwater bass in suitable OWA ponds	48	OWA	Potential concerns with fish interacting with fish in the Feather River
j. Modify recreation use pattern in the OWA, Therm Complex, and the FR to minimize impacts to TES species	59	OWA, Thermalito Complex, Feather River	Need to identify which species of concern (e.g. VELB)
Lower River Fish Habitat Improvement Program			
a. Create Additional Salmonid Rearing Habitat	13B	Low flow channel DS of TDD	Add physical structures (e.g. LWD, boulders. etc)
b. Create Side Channel Habitat for Salmonid Rearing	16A	Adjacent to low flow FR channel	
c. Restore Existing Side Channels for Salmonids	16B	Adjacent to low flow FR channel	
d. Gravel Replacement in Lieu of Natural Recruitment	92	Placed in low flow channel	Possible sources - Robinson Borrow Pond (see Koll Buer)
e. Feather River Bed Ripping for Spawning Gravel	18	Low Flow channel DS of FBD	Similar to EWG 90
f. Mechanical or Hydraulic Changes to the River Channel	93A	Low Flow Channel	Task Force put this as a Category 2, pending approval by the EWG.
g. Mechanical or Hydraulic Changes to the River Channel	93B	High Flow Channel	Task Force put this as a Category 2, pending approval by the EWG.
h. Open the Fish Barrier Pool for salmonid holding use	1	Low Flow Channel	Requires modifications to the Fish Barrier Dam (i.e. ladder)
i. Increase flows to increase the useable spawning habitat for salmonids	15A/B	Low Flow Channel	Flows could increase incrementally (15A) or a single ramp up flow (15B)
j. Modify or build 'benches' for splittail spawning habitat	19A	High Flow Channel	Also for juvenile Chinook salmon

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k. Mechanical or hydraulic changes to increase connectivity between the Lower Feather River and it floodplain	104	High Flow Channel	Need to determine flow requirements
l. Create levee setback to increase fish spawning habitat	89	Low Flow Channel	Could be done in conjunction with EWG-16A/B or EWG-99
Invasive Plant Species Control Program			
a. Control Noxious Plants in the Feather River	70	LFC below Thermalito Div. Dam	
b. Control Noxious Plants around Lake Oroville	74B	Low Flow FR channel, OWA, O.R.	Ongoing DWR O&M programs are doing some
c. Control Invasive Native Plants	75	OWA	Specifically to address primrose
d. Control Non-Native and Undesirable Plant Species in the Thermalito Complex	73	Thermalito Complex	Removal of star-thistle, purple loosestrife
Lake Oroville Fisheries Improvement Program			
a. Continue Ongoing Habitat Improvement Program	31	Lake Oroville	Need to formalize current activities in new Lic.
b. Continue to Maintain L.O. Cold Water Fisheries	50		Existing license requirement - no new action
Forebay/Afterbay Wildlife Habitat Development Prgm		Cross resource with Rec. Group (e.g. funding/stocking options)	
a. Construct Brood Ponds for Increased Nesting Waterfowl	56	Thermalito Complex	Generally very low costs
b. Dev. Upland Cover Enhancement (Nesting Waterfowl)	57A	Thermalito Afterbay	
c. Dev. Upland Cover Enhancement (Migrating Waterfowl)	57B	Thermalito Complex	Formerly EWG-69
d. Active plantings in the Th. Afterbay for wetland development	67	Thermalito Complex/OWA	Could also be implemented in the OWA
e. Recharge Brooding Ponds at 3-Week Interval	68(A)	Thermalito Complex	
f. Use Brooding Ponds as nursery habitat (warmwater species)	68(A)	Thermalito Afterbay	Potenital concerns with impacts to waterfowl
Lake Oroville Habitat Enhancement Program			
a. Dev. Lake Oroville Upland Enhancement Program	62	Lake Oroville	Would include restoring native plant communities in the upland areas
b. Develop maintenance and rec. protocols for protection of special status species (TES)	82	Lake Oroville	
c. Build/enhance riparian habitat in the fluctuation zone	68B	Lake Oroville	Primarily for bass habitat
d. Modify/Retrofit Rec. Facilities to Reduce Nuisance Wildlife	63	Lake Oroville	Remove food sources, nesting sites, refuge areas
Modify Flow Program-Low Flow Channel			
a. Modify Base Flows in the Low Flow Channel	88	Low Flow Channel, downstream of the Thermalito Diversion Dam	A flow of 725 cfs has been determined to be the optimal flow for WUA. Flows to be refined using SP-F16 & w/ Curtis Creel (models and water year type).
Temperature Control Program (High Flow Channel) Options		Below Thermalito Afterbay Outlet	Ops and Engineering is key determinant
a. Operate Oroville Facilitates to Provide Addt'l Coldwater	37	High Flow Channel	May also include EWG-36 (Low Flow Channel)
b. Operate Thermalito Complex to Provide Coldwater (salmonids)	83	Thermalito Complex	May conflict with EWG-87
c. Provide Coldwater to Mimic Historic Flows	83	Lower Feather River	Similar to EWG-37
Water Quality Educational/Improvement Program			

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a. Dev. Educational Water Usage Signage Program for Public Education	86A	Lake Oroville Rec Facilities	This would include a program educating the public on source, usage, and impacts to the project waters.
b. Dev. Water Quality Signage Program. The Program Could Include Signage such as "Don't Eat The Fish" or "No Swimming".	86B	Project Waters	This would be designed to inform the public of potential water quality concurs related to the project waters (elevated bacteria, contaminants, etc.).
c. Construct Settling Ponds (Reduce Leaching/Evap)	84A	Low Flow Channel	This would include either constructing new ponds or lining existing ponds to prevent leaching. Related to hatchery operations.
d. Line Existing Holding Ponds (reduce leaching)	84B	Low Flow Channel	See above description
Misc Resource Actions (not included above)			
a. Reduce Rec. Disturbances on Wildlife Populations	65	Lake Oroville Rec Facilities	Dave Bogener has details of potential program
b. Dev. Protection and Avoidance Protocols or Sensitive Plants	82	Lake Oroville Rec Facilities	Includes addressing potential impacts from Recreation and related facilities (Gail K. has info)
c. Operate Facilitates to Provide Warm Water for Ag.	87	Thermalito Complex	Not yet Categorized by the EWG
d. Create Habitat in Feather River Tributaries	98	N/S Honcut Crks and Wilson Creek - OWID exchange (reconnect Ruddy Crk)	Add flows to these tributaries
e. Create Habitat in the Feather River and Honcut Creek	99	Lower Feather River	Modify habitat and/or add flows
f. Open the Fish Barrier Pool for salmonid holding use	1	Low Flow Channel	Requires modifications to the Fish Barrier Dam (i.e. ladder)
g. Simulate historic flows in the L. Feather River	100	Lower Feather River	Not yet Categorized by the EWG
h. Release hatchery steelhead at a smaller size or later in year	42	High Flow Channel	To reduce predation
i. Provide warmwater species additional habitat, structure	26	Thermalito Afterbay	Areas would be those without weeds, structures, etc.
j. Manage flows to reduce/prevent bass nest strandings	28	Thermalito Afterbay	Under current operations, this is not a problem
k. Create Salmonid stocking program in the Afterbay	45	Thermalito Afterbay	Requires coordination with CA F&G